Company Value Measurement through Intellectual Capital and Firm Size

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Abstract
This research was conducted with the aim of analyzing the effect from Intellectual Capital and Firm Size on financial performance that is measured by the value of companies in the real estate and property sectors that survive on the Indonesia Stock Exchange in the 2018-2019. The data collection technique used is the documentation method and based on the selected criteria, 38 companies were obtained as the research sample. The data analysis technique used Multiple Regression with the SPSS 23 as the statistic tool. The results from this study proves that partially Intellectual Capital as measured by Value Added Intellectual Capital (VAIC) has a positive and significant effect on Company Value as measured by Return On Equity (ROE), while Firm Size as measured by using Ln Assets has a negative and insignificant effect on Company Value. However, Intellectual Capital and Firm Size simultaneously have a significant positive effect on Company Value. This research will be very useful for domestic and international investors in predicting the value in real estate and property companies by using the measurement of Intellectual Capital and Firm Size.

Keywords
Intellectual Capital, Company Value, Firm Size, Value Added Intellectual Capital, Return on Equity

1. Introduction
A company is created with the aim of achieving high corporate value to provide prosperity for its owners and shareholders (Luckieta et al., 2020). The maximum value from organization is the most important factor, because to achieve the main goal of the company is proven by the maximum company value (Amelia & Anhar, 2019). The increase in company value is one of the main objective that related with the wishes of the management, with the increase in company value, the company's performance will look good (Parhusip et al., 2016). Firm value is a reflection of company performance (Sutriningsih et al., 2019). One of the measuring tools for determining firm value is Return on Equity (ROE) where ROE is the company's ability to generate profits using its own capabilities (Pongrangga, 2015).

The world has developed so rapidly where this can be seen in the progress of information and digital technology, the existence of intense competition as well as the many new innovations in all industrial fields so that many companies have experienced changes in their business processes (Jacub, 2012). Changes in business process patterns from those based on labor to business process patterns based on knowledge so that this indirectly affects the main characteristics of the company, namely becoming a knowledge-based company (Gogan et al., 2016). Companies that use knowledge as a way to obtain company revenue will make changes to the formation of company value (Amin, 2011). With the fact that the importance of knowledge is the determining point of emphasis for the creation of company value, hence
organizations are increasingly concerned with knowledge as a company asset (Khairiyansyah & Vebsasvil, 2018). One approach taken to measure and assess the size of the knowledge assets is the existence of intellectual capital (Sudibya & Restuti, 2014).

The firm size in general describes the measurement of the size of a company which is usually seen from the total assets, accumulated sales (Febria, 2013). Generally, firm size is defined as the size of assets owned by the company (Maha Dewi & Sudiartha, 2017). Companies with large total assets tend to be able to easily support the company’s operations and the funding needs of their business so it is assumed that it can be easier to increase company revenue which will make the company value rise faster (Ayu & Setiadewi, 2012). Measurement of company value is sometimes assumed by measuring the size of the company (Maretha, 2016).

Companies listed on the Indonesian stock exchange have a tendency to have company values that fluctuate from time to time due to various factors. Based on previous research conducted on companies in the pharmaceutical sector in the Indonesia Stock Exchange, the intellectual capital has a significant positive effect on firm (Jacub, 2012). Research conducted on companies that are included in the Kompas 100 index in the Indonesia Stock Exchange has the result stated the Intellectual Capital has a significant positive effect on firm value (Sari et al., 2012). The study conducted on companies registered on the Indonesia Stock Exchange for the period 2005 to 2010 states that intellectual capital has no effect on company value as measured by market value (Sari et al., 2012). The study conducted on companies listed on the Indonesia Stock Exchange from 2016 to 2018 says that firm size and dividend policy have a significant effect on company value (Adiputra & Hermawan, 2020). The research conducted on real estate and property companies from 2014 to 2016 mention the firm size has no effect on company value (Suryandani, 2018). The result from that research is in line with another study conducted on manufacturing companies in Sri Lanka from 2008 to 2012 which stated that firm size had no effect on company value (Nires & Velnampy, 2014). From all the results of this study, there is a gap that makes researchers interested in further examining what factors have the most influence on company value in the real estate and property sectors that are active on the Indonesia Stock Exchange during the 2018-2019 period.

1.1 Objectives
The success of a country cannot be separated from the role of both domestic and foreign investors. Indonesia is a developing country where the economy continues to grow from time to time. One of the best ways for an investor to be able to invest in companies in Indonesia is to see the success of a company. One of the benchmarks of the success of a company can be seen from the large ratio of the value of the company it owns. The means to easily see company value in companies listed on the Indonesia Stock Exchange is by calculating the existing ratios with the data presented. However, the value of a company fluctuates greatly from time to time. This sometimes makes it difficult for an investor to be able to predict in the selection of the company they will invest in or the amount they will invest. There are many determining factors in calculating the value of a company. For this purpose, this research was conducted with the aim of making it easier for local and foreign investors who are interested and will invest in Indonesia. The results of this study will be very useful for those investors who are interested in investing in real estate and property companies, namely by looking at the intellectual capital factor and company size to calculate the ratio of company value.

2. Literature Review
2.1 Return on Equity (ROE)
In financial management, one of the basic principles is that the goal the company wants to achieve is maximum corporate value (Luckieta et al., 2020). One way to achieve the maximum value for the organizations which have listed in Indonesia Stock Exchange is by maximizing the ROE ratio (Sipahelut et al., 2018). ROE is a ratio that describes the ability of a company to generate returns to shareholders on the capital invested in the company (Krisnawati & Miftah, 2019). The ratio of ROE can be formulated as follows (Sartono, 2010):

\[
\text{ROE} = \frac{\text{Net Profit After Tax}}{\text{Shareholder Equity}}
\]
2.2 Intellectual Capital

Conceptually, Intellectual Capital mostly related to non-physical capital or intangible capital which are defined to human knowledge and experience as well as the technology used (Nhon et al., 2018). In simple terms, the definition of intellectual capital is the ability of an organization to be able to create, transfer and implement knowledge (Ekonomi et al., 2000).

Three main concepts of Intellectual Capital are Human Capital (HC), Structural Capital (SC) and Customer Capital (CC) (Nhon et al., 2018). HC defined as the individual knowledge of its employees. HC is a person's knowledge, skills and abilities that can be used to produce professional services (Lestari, 2016). SC covers all non-human store houses in a company. SC stores and maintains knowledge so that this knowledge becomes the property of the company (Sudibya & Restuti, 2014). CC is knowledge inherent that related in marketing channels, distribution and relationship with the customer in a company that continues to grow in line with the development of the business (Camfield et al., 2018).

One of the method developed to present the information for value creation efficiency from tangible and intangible assets is the Value Added Intellectual Coefficient (VAIC) (Agustami & Rahman, 2015). VAIC is the performance of intellectual capital which is measured based on the added value created by Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Structural Capital Value Added (STVA) which can be represented by the following formula (Faza & Hidayah, 2014):

\[
VAIC = VACA + VAHU + STVA
\]

Considering the research results related to company value and intellectual capital above, in this study the authors propose the following hypotheses:

Hypothesis 1: VAIC has an effect on ROE

Hypothesis 2: Ln Total Assets has an effect on ROE

2.3 Firm Size

The classification of company size is based on Indonesian Law No. 20 of 2008, is divided into 4 categories, namely micro, small, medium and large enterprises. The classification is based on the total assets owned and the total annual sales of the company. According to the decision of the Chairman of Bapepam Number: Kep.11 / PM / 1997, it is said that legal entities with the total assets of not more than one hundred billion are small and medium-sized companies. While legal entities with total assets above one hundred billion are defined as a large company. The value of equity, sales revenue or asset value also can be seen as the firm size (Ta’dir et al., 2014). The measurement tools used for company size in this study can be formulated as follows (Maretha, 2016):

\[
\text{Firm Size} = \ln(\text{Total Asset})
\]

Considering the research results related to firm value and company size above, in this study the authors propose the following hypothesis as follows:

Hypothesis 3: VAIC and Ln Total Assets have an impact on ROE

3. Methods
The study is included in survey study using descriptive verification method which aims to interpret the connection from each variable by first interpreting the conclusions that will be obtained through hypothesis submission. The quantitative analysis techniques using a multiple regression approach is used in this study, which variables used are the variable VAIC (X1), Ln Assets (X2), and ROE (Y).

4. Data Collection
Real estate and property companies listed and was active on the Indonesia Stock Exchange during the 2018-2019 period is the object where the study is conducted, which was obtained through the website www.idx.co.id. The data were obtained from the financial reports published by the Indonesia Stock Exchange for the period 2018 to 2019.

5. Results and Discussion
5.1 Graphical Results
The results showed that secondary data were obtained from three variables, namely VAIC data, Ln Total Assets and ROE data. The data is then processed with the following results in Table 1 and Table 2.

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1795.762</td>
<td>997.279</td>
<td></td>
<td>1.801</td>
<td>.076</td>
</tr>
<tr>
<td>Intellectual Capital</td>
<td>.578</td>
<td>.164</td>
<td>.375</td>
<td>3.526</td>
<td>.001</td>
</tr>
<tr>
<td>Firm Size</td>
<td>-.693</td>
<td>.371</td>
<td>-.199</td>
<td>-1.870</td>
<td>.066</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Company Value

The linear regression equation model from Table 1 is known as follows:

Company Value = 1795.762 + 0.578 Intellectual Capital – 0.693 Firm Size

Table 2: Determination Coefficient Test Results (R²)

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>.419a</td>
<td>.175</td>
<td>.153</td>
<td>1332.236</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Firm Size, Intellectual Capital

Table 3: F Test Result

<table>
<thead>
<tr>
<th>Model</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>7.750</td>
<td>.001b</td>
</tr>
</tbody>
</table>

From the results of the ANOVA test or F test, it is obtained that the F count is 7,750 with a probability of 0.000. Since the probability is much smaller than 0.05, a regression model can be used to predict firm value. Or it can be said that Intellectual Capital and Company Size together (simultaneously) have a significant effect on firm value.

5.2 Validation
5.2.1 The Effect of Intellectual Capital on Company Value
The development of today's world where it continues to develop rapidly and tends to value intellectual property more as an intangible resource of a company. Intangible assets are assets that can be valued non-monetary without physical form. The main thing that is the goal in the economy is to create value added based on knowledge. The measurement
of business value, in this case, is the measurement of company value, which can slowly be replaced by the measurement of the value of intangible but very valuable assets.

Based on the results of the above calculations, it can be seen that simultaneously Intellectual Capital has a significant positive effect on Company Value. At this time, the advantages of each existing company are needed to be able to compete in the market, so as to help increase the value of the company (Dewi & Candradewi, 2018). The advantages possessed by this company consist of its resources, both in the form of tangible assets and intangible assets (Tauke et al., 2017). With a combination of resources and the ability to process them, it will create advantages that can increase the Company's Value (Krisnawati & Miftah, 2019). This is proven from previous research and also the research conducted in this time.

5.2.2 The Effect of Firm Size on Company Value
Large companies generally require substantial costs to run their company operations. On the other hand, a company with a smaller scale will be more focused on the existing market so that it will be more able to achieve company goals. This will have an impact on increasing company profits so that the company value can be better. Company size can be seen from the assets owned by the company. If the assets of a company are considered larger than the assets of other companies, the potential for its resources will be greater so that it can be maximally utilized to meet market needs and demands. The size of this company can have a lot of influence on the company's ability to generate profits. If economic conditions are stable, and company management can make good use of its resources, the company's profits will increase. Likewise, vice versa. Not all companies can take advantage of the assets they have to generate profits properly. This of course will depend on management in managing assets to increase company

The positive ratio of the firm size which is calculated from the total assets will show that if the whole of assets used properly it will increase the company value (Mareth, 2016). In the several previous research, it was found that the bigger of the size of the firm, the company value from the company will also increase (Suryandani, 2018). But the ratio of the company size in this study simultaneously has a negative and insignificant effect on Company Value.

5.2.2 The Effect of Intellectual Capital and Firm Size on Company Value
From the table above, partially, Intellectual Capital has a significant positive effect on Firm Value, but Firm Size has a significant negative effect on Firm Value. It is also proven from the results of the calculations in the table above that it turns out that simultaneously Intellectual Capital and Firm Size have an effect on Company Value by 17.50%, and the difference is the influence of other factors.

5.3 Proposed Improvements
The result of this study find out that simultaneously Intellectual Capital and Firm Size have an effect on Company Value by 17.50%, and the difference is the influence of other factors. To investigate these other factors, for further research different measurements can be used to measure the effect of capital, assets and assets on firm value, including using Debt to Asset Ratio (DAR), Total Asset Turn Over (TATO), sales growth and others. It is hoped that there will be further research that can conduct tests that discuss more deeply about the ratio of firm size which has no significant effect on company value. This research is only conducted on real estate and property companies that are listed and survive on the Indonesia Stock Exchange for the period 2018-2019, it is hoped that further research can be carried out on companies of other types as well with a newer period so that they can provide the information needed for investors in country and abroad to be able to predict the value of the company and make investments with good calculations.

5.4 Research Contribution and The Implication of the results
The Economic growth in all countries can be used as a measurement tool to analyze the level of economic development in that country. Economic growth in a country can be caused by many factors, one of which is investment. The occurrence of investment is one factor that is very important and plays a big role in the growth and economic development of a country. When investors, whether entrepreneurs, individuals or governments invest, there is a certain amount of capital invested in the country where these investors invest so that the country's economy can grow. For developing countries, investment or loans are very much relied on to boost their economic growth because if the level of investment is high, people's productivity will also be high and will have an impact on increasing people's income.
Investors who will invest, of course, will learn many investment appraisal criteria that are suitable for them to invest. They will try to find the best company criteria so that the investment they make will give optimal results. One of the targets of many investors is the real estate and property sector, especially in Indonesia.

The real estate and property sector in Indonesia have shown good growth over the last decade. This industry provides a lot of room for better expansion in the next few years. This increases the curiosity of investors about the development of the industrial sector in the real estate and property sectors.

One of the easiest ways for domestic and foreign investors to view investment prospects from the real estate and property sector is to see how much value the company is interested in. This research will contribute quite a lot to these investors so that they can measure company value when viewed from the measurement of intellectual capital and firm size.

The implication of this research is that there are very useful results for investors both at home and abroad to see the company value of the real estate and property industry in 2018-2019 as measured by ROE, as well as the influence of Intellectual Capital and Firm Size on company value. real estate and property for the year. With the results given in this study, they will be able to make decisions so that they can invest or not, and this of course will greatly affect economic growth in Indonesia. The contributions and the implications of the results in practice that this research will be very useful for domestic and international investors in predicting the value in real estate and property companies by using the measurement of Intellectual Capital and Firm Size especially in real estate and property companies.

6. Conclusion
The better the company value, it can be seen from the greater the value of intellectual capital, therefore the higher the VAIC, the higher the ROE. In this study, VAIC has a partial and positive effect on ROE in real estate and property companies that are listed and active on the Indonesian Stock Exchange for the period 2018-2019. The increase in VAIC will have an effect on the increase in Firm Value which is in accordance with the existing theory. Company size, which in this study is measured by Ln Assets, has a partially negative effect on Firm Value in real estate and property companies. Therefore an increase in firm size will affect the decrease in Firm Value. Intellectual Capital and Company Size which in this study are proxied by the value of VAIC and Ln Assets have a simultaneous impact on the company value which is proxied into the ratio of ROE in real estate and property industries that are entered and are active and survive on the Indonesia Stock Exchange for the period 2018-2019. The measurement of the firm value variable in this study was ROE, the Intellectual Capital variable used VAIC and the firm size measurement used Ln Assets.

References


**Biography**

**Meiliani Luckieta** is a lecturer of Accounting Department at Harapan Bangsa Business School, Bandung, West Java, Indonesia. She earned bachelor degree in accounting from Bandung Raya University, Indonesia; Masters in Financial Management from STIE Inaba, Indonesia. She has published journals. Meiliani’s research interests include finance management, accounting, tax, business and management. She is member of Indonesian Accountant Association (IAI) and Indonesian Tax Consultant Association (IKPI).

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**Ivan Diriysana Sudirman** is a faculty member of entrepreneurship department at Bina Nusantara University. graduated with a geodesy engineering degree from the Bandung Institute of Technology, then continued his master's degree in industrial engineering at the Bandung Institute of Technology. Then he took a doctoral program in business management at Padjadjaran University. Apart from being a lecturer, he also has a business in the culinary field that has been running for 10 years, he also has experience working at the Garuda Maintenance Facility. Currently, his research fields are information systems, data science and marketing.